FUTV468X 4-in-1 IRD

User's Manual

Web-NMS Version: 1.03

Software: 1.00

Hardware: 0.40

FMUSER International Group Inc.

About This Manual

Intended Audience

This user manual has been written to help people who have to use, to integrate and to install the product. Some chapters require some prerequisite knowledge in electronics and especially in broadcast technologies and standards.

Disclaimer

The contents of this document are subject to revision without notice due to continued progress in methodology, design and manufacturing. FMUSER shall have no liability for any error or damage of any kind resulting from the use of this document.

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Chapter 1 Product Outline

1.1 Outline

FUTV468X IRD is FMUSER's new design which integrates demodulation (DVB-C, T/T2, S/S2 optional), de-scrambler and multiplexing in one case to convert RF signals into TS output.

It is a 1-U case which supports 4 tuner inputs, 1 ASI and 4 IP inputs. The 4 CAMs/CIs accompanied can descramble the programs input from encrypted RF, ASI and IP. The CAM requires NO unsightly external power cords, cables, or additional remote control device.

To meet customers' various requirements, FUTV468X is also designed to re-mux programs from any input, and output TS over 48 SPTS.

1.2 Features

- 4 Tuner inputs (DVB-C, T/T2, S/S2 Optional)
- 1 ASI & 4 IP (UDP) input for re-mux
- One CAM can decrypt multiple programs from Tuners/ASI/IP
- IP (48 SPTS) over UDP and RTP/RTSP output;
- 4 groups of independent ASI out for tuner/IP passthrough (one-to-one)
- Support maximum 128 PID mapping per input
- LCD display, Remote control and Firmware, web NMS management
- Updates via web
- Best quality and breakthrough price

1.3 Specifications

Input
4x RF (DVB-C, T/T2, S/S2 optional), F type
1×ASI input for re-mux, BNC interface
4xIP input for re-mux (UDP)

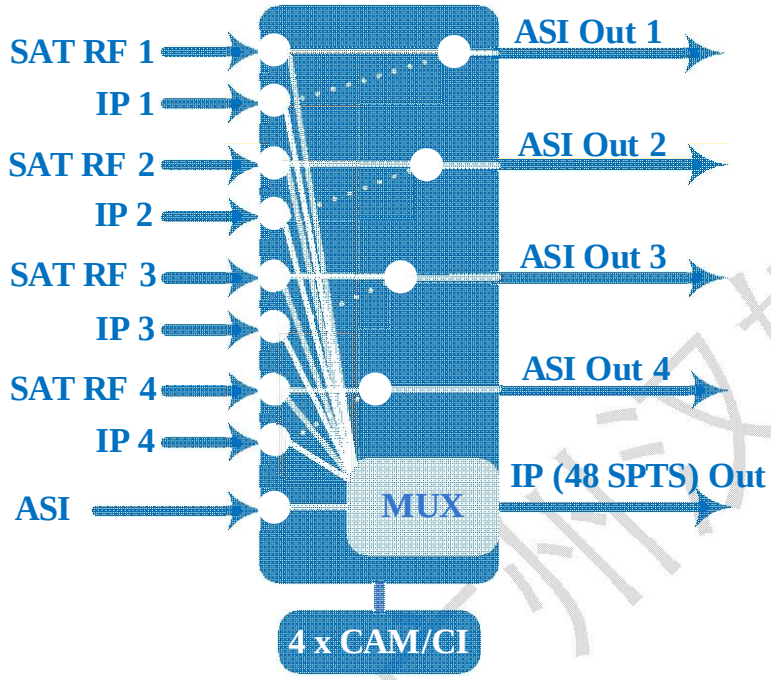
Tuner Section	
DVB-C	
Standard	J.83A(DVB-C), J.83B, J.83C
Input Frequency	47 MHz~860 MHz
Constellation	16/32/64/128/256 QAM
DVB-T/T2	
Input Frequency	44MHz ~1002 MHz
Bandwidth	6/7/8 M
DVB-S	
Input Frequency	950-2150MHz
Symbol rate	2-45Msps
Signal Strength	- 65- -25dBm
Constellation	1/2, 2/3, 3/4, 5/6, 7/8 QPSK
DVB-S2	
Input Frequency	950-2150MHz
Symbol rate	QPSK 1~45Mbauds; 8PSK 2~30Mbauds
Code rate	1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10
Constellation	QPSK, 8PSK

Output	
IP	48*SPTS over UDP, RTP/RTSP. 100Base-T Ethernet interface (unicast / multicast)
ASI	4 groups BNC interface

System	
Local interface	LCD + control buttons
Remote management	Web NMS Management
Language	English

General	
Power supply	AC 100V~240V
Dimensions	482*400*44.5mm
Weight	3 kgs
Operation temperature	0~45℃

1.4 Principle Chart



choose 4 channels from all inputs to descramble
CI 1 & 2 are designed to descramble tuner 1/2, ASI or IP 1-4.
CI 3 & 4 are designed to descramble tuner 3/4, ASI or IP 1-4.

1.5 Appearance and description

Front Panel Illustration:

1	LCD Display
2	Indicators Area (Lock 1-4: they light up when the tuner signal are properly connected. Descram 1-4: they light up when the CI cards are properly inserted.
3	Up/Down/Left/Right Buttons
	Enter Key for confirmation
	Menu Key for backward
	Lock Key

Rear Panel Illustration

1	CAM/CI Slots 1 & 2 (Applied to descramble tuner 1 & 2, ASI input and IP input 1 to 4)
2	Tuner Input 1 & 2
3	CAM/CI Slots 3 & 4 (Applied to descramble tuner 3 & 4, ASI input and IP input 1 to 4)
4	Tuner Input 3 & 4
5	ASI output groups 1-4
6	ASI input port for re-mux
7	NMS Port (connect to PC for device management)
8	DATA Port (for IP stream input & output)
9	Power switch/Fuse/Socket/Grounding Wire

Chapter 2 Installation Guide

2.1 Acquisition Check

When user opens the package of the device, it is necessary to check items according to packing list. Normally it should include the following items:

- FUTV468X 4-in-1 IRD 1pcs
- User's Manual 1pcs
- Tuner Cables (for loop through) 2pcs
- Power Cord 1pcs

If any item is missing or mismatching with the list above, please contact our company.

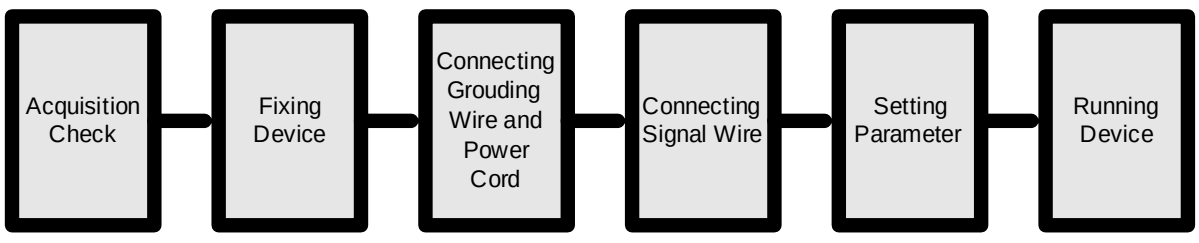
2.2 Installation Preparation

When users install device, please follow the below steps. The details of installation will be described at the rest part of this chapter. Users can also refer rear panel chart during the installation.

The main content of this chapter including:

- Checking the possible device missing or damage during the transportation
- Preparing relevant environment for installation
- Installing modulator
- Connecting signal cables
- Connecting communication port (if it is necessary)

2.2.1 Device's Installation Flow Chart Illustrated as following：



2.2.2 Environment Requirement

Item	Requirement
Machine Hall Space	When user installs machine frame array in one machine hall, the distance between 2 rows of machine frames should be 1.2~1.5m and the distance against wall should be no less than 0.8m.
Machine Hall Floor	Electric Isolation, Dust Free Volume resistivity of ground anti-static material: $1X10^{7}$~$1X10^{10\Omega}$，Grounding current limiting resistance: 1M (Floor bearing should be greater than 450Kg/㎡)
Environment Temperature	5~40℃(sustainable)，0~45℃(short time)， installing air-conditioning is recommended
Relative Humidity	20%~80% sustainable 10%~90% short time
Pressure	86~105KPa
Door & Window	Installing rubber strip for sealing door-gaps and dual level glasses for window
Wall	It can be covered with wallpaper, or brightness less paint.
Fire Protection	Fire alarm system and extinguisher
Power	Requiring device power, air-conditioning power and lighting power are independent to each other. Device power requires AC power 100-240V 50-60Hz. Please carefully check before running.

2.2.3 Grounding Requirement

- All function modules' good grounding is the basis of reliability and stability of devices. Also, they are the most important guarantee of lightning arresting and interference rejection. Therefore, the system must follow this rule.
- Coaxial cables outer conductor and isolation layer should keep proper electric conducting with the metal housing of device.
- Grounding conductor must adopt copper conductor in order to reduce high frequency impedance, and the grounding wire must be as thick and short as possible.
- Users should make sure the 2 ends of grounding wire well electric conducted and be antirust.
- It is prohibited to use any other device as part of grounding electric circuit
- The area of the conduction between grounding wire and device's frame should be no less than 25mm^2.

2.2.4 Frame Grounding

All the machine frames should be connected with protective copper strip. The grounding wire should be as short as possible and avoid circling. The area of the conduction between grounding wire and grounding strip should be no less than 25mm^2.

2.2.5 Device Grounding

Connecting the device's grounding rod to frame's grounding pole with copper wire.

2.3 Wire's Connection

The grounding wire conductive screw is located at the right end of rear panel, and the power switch, fuse, power supply socket is just beside ,whose order goes like this, power switch is on the left ,power supply socket is on the right and the fuse is just between them.

- Connecting Power Cord

  User can insert one end into power supply socket, while insert the other end to AC

power.

- Connecting Grounding Wire

  When the device solely connects to protective ground, it should adopt independent way, say, share the same ground with other devices. When the device adopts united way, the grounding resistance should be smaller than 1Ω.

F Caution:

Before connecting power cord to FUTV468X IRD, user should set the power switch to "OFF".

2.4 Signal Cable Connection

The signal connections include the connection of input signal cable and the connection of output signal cable. The details are as follows:

2.4.1 FUTV468X 4-in-1 IRD Cables Illustration:

- **IP Input/output Cable Illustration:**

- **Tuner Cable Illustration:**

ASI Input/output Cable Illustration:

Chapter 3 Operation

The front panel of FUTV468X 4-in-1 IRD is the user-operating interface and the equipment can be conveniently operated and managed according to the procedures displayed on the LCD:

Keyboard Function Description:

LEFT/RIGHT: Choose and set the parameters.

UP/DOWN: Modify activated parameter or paging up/down when parameter is inactivated.

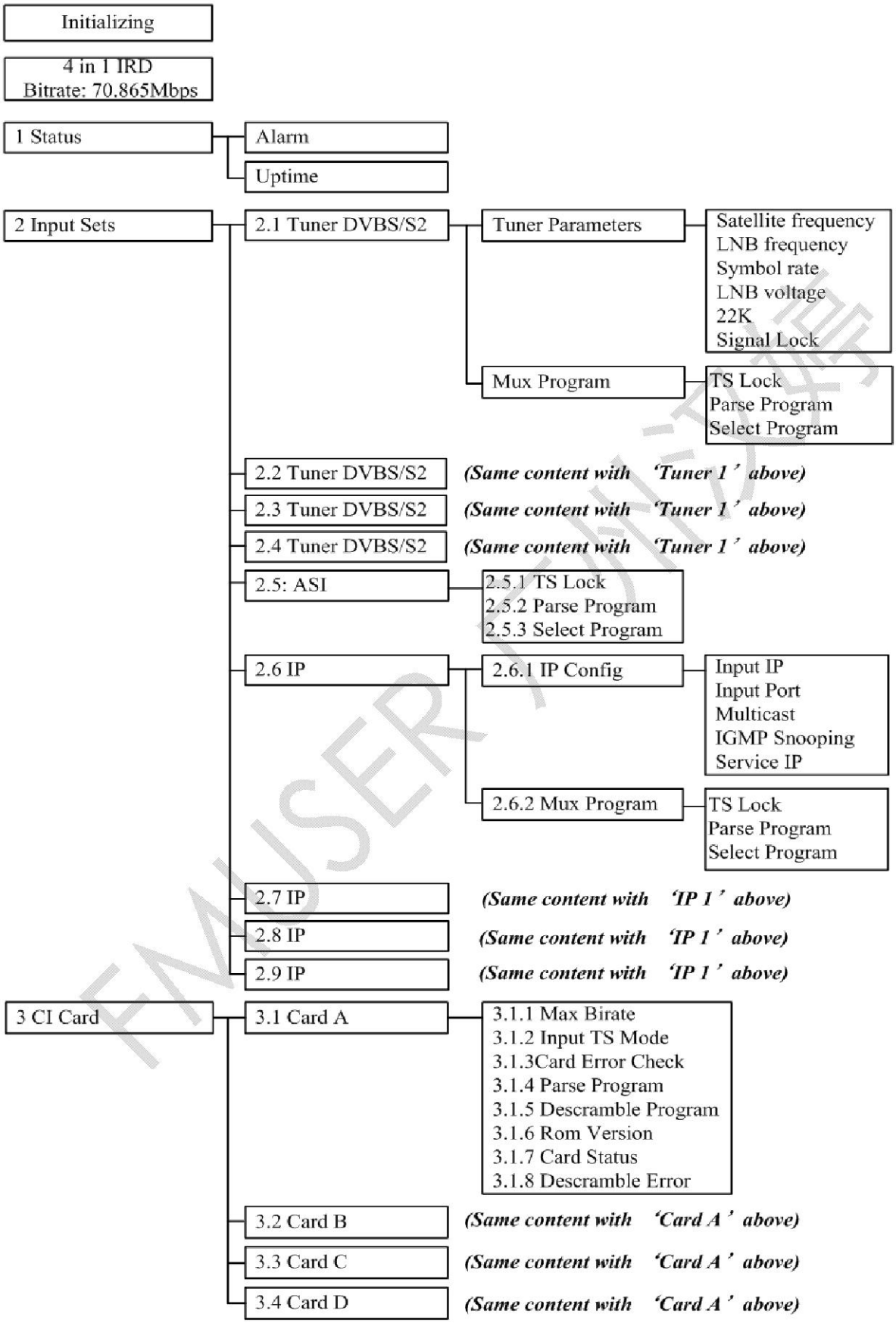
ENTER: Activate the parameters which need modifications, or confirm the change after modification.

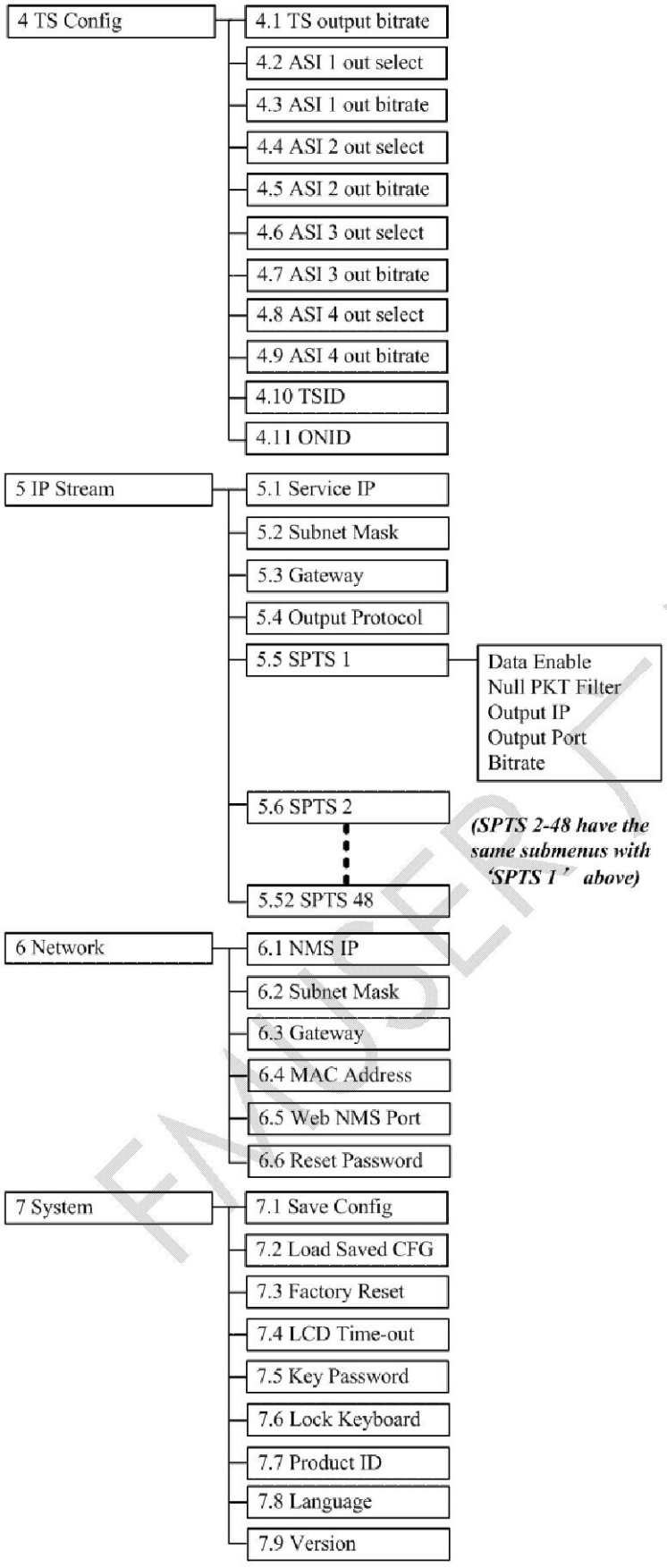
MENU: Cancel current entered value, resume previous setting; Return to previous menu.

LOCK: Lock the screen/cancel the lock state. After pressing the lock key, the LCD will display the current configuring state.

3.1 LCD Menu Structure

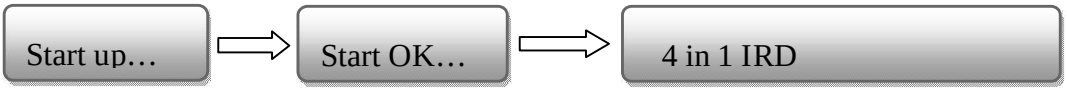
(See next page :)


Initializing
4 in 1 IRD
Bitrate: 70.865Mbps
1 Status
Alarm
Uptime
2 Input Sets
2.1 Tuner DVBS/S2
Tuner Parameters
Satellite frequency
LNB frequency
Symbol rate
LNB voltage
22K
Signal Lock
Mux Program
TS Lock
Parse Program
Select Program
2.2 Tuner DVBS/S2
(Same content with 'Tuner 1' above)
2.3 Tuner DVBS/S2
(Same content with 'Tuner 1' above)
2.4 Tuner DVBS/S2
(Same content with 'Tuner 1' above)
2.5: ASI
2.5.1 TS Lock
2.5.2 Parse Program
2.5.3 Select Program
2.6 IP
2.6.1 IP Config
Input IP
Input Port
Multicast
IGMP Snooping
Service IP
2.6.2 Mux Program
TS Lock
Parse Program
Select Program
2.7 IP
(Same content with 'IP 1' above)
2.8 IP
(Same content with 'IP 1' above)
2.9 IP
(Same content with 'IP 1' above)
3 CI Card
3.1 Card A
3.1.1 Max Birate
3.1.2 Input TS Mode
3.1.3Card Error Check
3.1.4 Parse Program
3.1.5 Descramble Program
3.1.6 Rom Version
3.1.7 Card Status
3.1.8 Descramble Error
3.2 Card B
(Same content with 'Card A' above)
3.3 Card C
(Same content with 'Card A' above)
3.4 Card D
(Same content with 'Card A' above)


4 TS Config
4.1 TS output bitrate
4.2 ASI 1 out select
4.3 ASI 1 out bitrate
4.4 ASI 2 out select
4.5 ASI 2 out bitrate
4.6 ASI 3 out select
4.7 ASI 3 out bitrate
4.8 ASI 4 out select
4.9 ASI 4 out bitrate
4.10 TSID
4.11 ONID
5 IP Stream
5.1 Service IP
5.2 Subnet Mask
5.3 Gateway
5.4 Output Protocol
5.5 SPTS 1
Data Enable
Null PKT Filter
Output IP
Output Port
Bitrate
5.6 SPTS 2
(SPTS 2-48 have the same submenus with 'SPTS 1' above)
5.52 SPTS 48
6 Network
6.1 NMS IP
6.2 Subnet Mask
6.3 Gateway
6.4 MAC Address
6.5 Web NMS Port
6.6 Reset Password
7 System
7.1 Save Config
7.2 Load Saved CFG
7.3 Factory Reset
7.4 LCD Time-out
7.5 Key Password
7.6 Lock Keyboard
7.7 Product ID
7.8 Language
7.9 Version

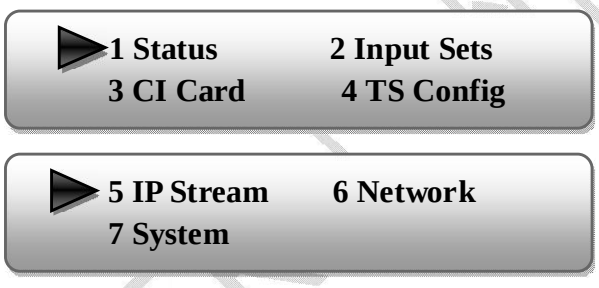
3.2 General Setting

Switch on the device and after a few seconds' initialization, it presents start-up pictures as below:



- **4 in 1 IRD**: Device's name
- **Bitrate: xx.xxx Mbps** indicates the current output bitrate.

Press LOCK key on the front panel to enter the main menu. The LCD will display the following pages where user can configure the parameters for the device:



User could do all the settings according to the 7 directions displayed on the LCD. User can press UP/DOWN and RIGHT/LEGT buttons to specify menu item, and then press ENTER to enter the submenus as below:

3.2.1 Status

Alarm: The alarm indicator will turn on if there is no signal inputting or outputting bit rate overflows. User then can enter this menu to check the error type. Otherwise it shows the 'system is normal'.

Uptime: It displays the working time duration of the device. It times upon power on.

3.2.2 Input Sets

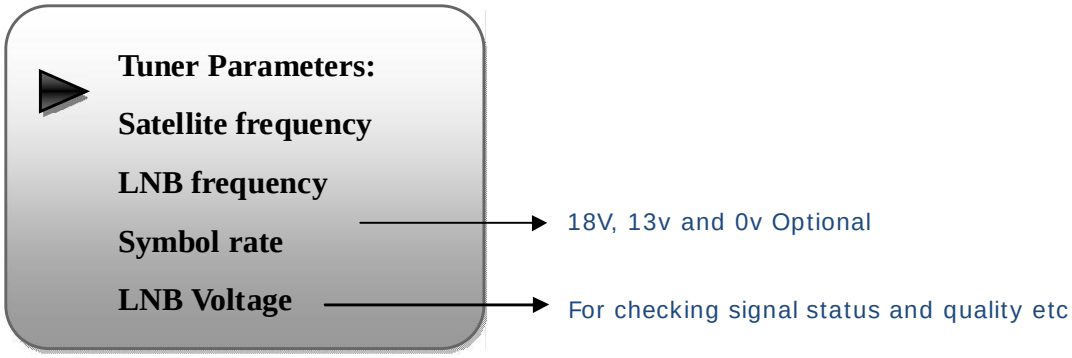
FUTV468X supports 4 tuners input, 1 ASI input and 4 IP stream input. Users can enter 'Input Sets' to configure the tuner/ASI/IP parameters to receive the transport streams and select programs to mux out via IP packages. It displays as below:

Ø **Tuner DVB-S/S2 (Submenus 2.1 – 2.4)**

Press ENTER key to enter '2.1 Tuner DVBS/S2' (or 2.2/2.3/2.4) to configure the corresponding tuner input according to rear panel. It displays as below:

Tuner Parameters:

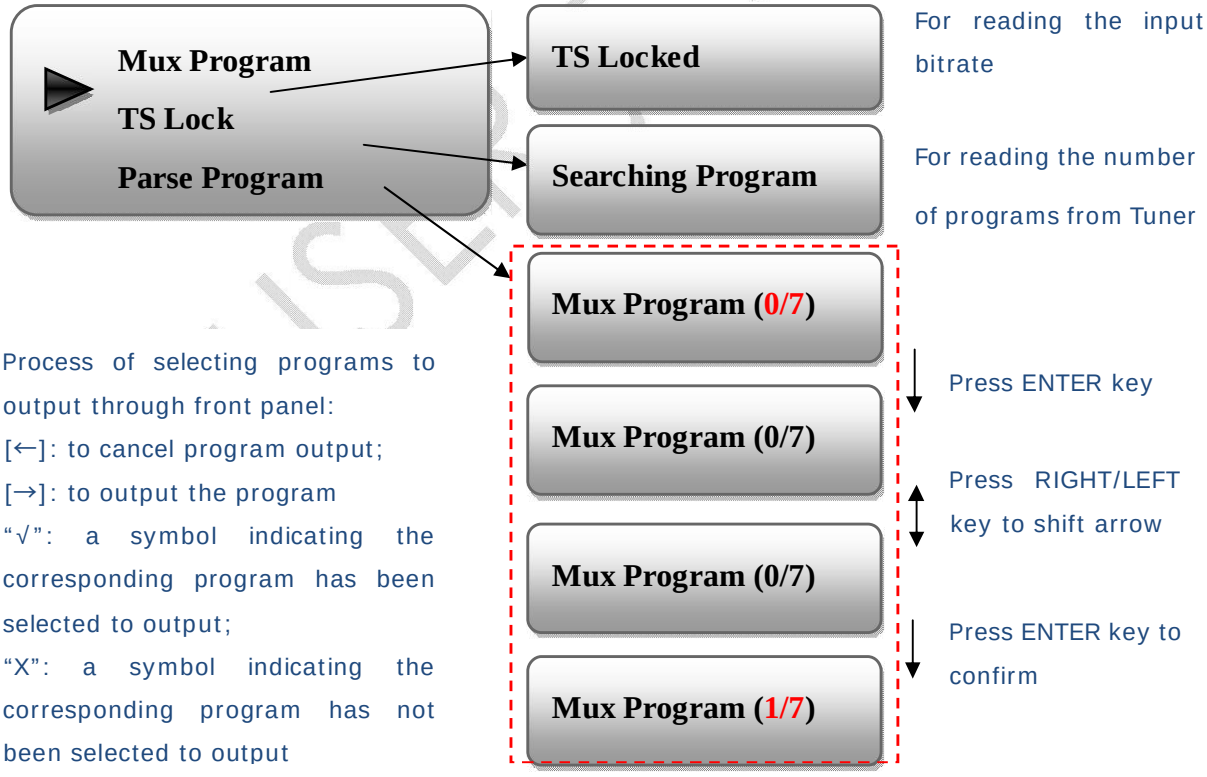
Users can enter this menu to configure the tuner parameters separately to receive the tuner programs.



Mux Program:

Users can parse the Tuner input program list and select programs to mux out in this menu.

NOTE: Multiplexed programs can only be output through IP (48 SPTS).



'1/7' represents there are all 7 programs in the list and 1 program has been selected to mux out through ASI.

Ø ASI (Submenus 2.5)

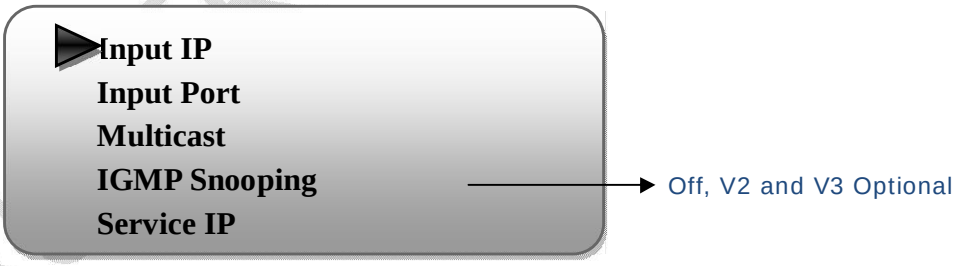
Users can parse ASI input programs and select program(s) to mux out under this menu. The operating method is same with what explained above.

Ø IP (Submenus 2.6 – 2.9)

Press ENTER key to enter '2.6 IP', it displays as below:

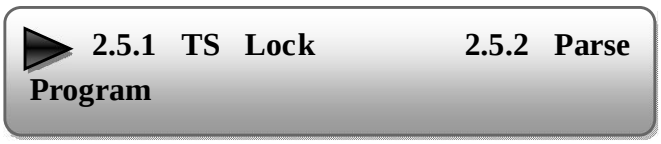
IP Config:

Users can enter this menu to configure IP parameters according to the IP source to receive the IP programs.



Mux Program:

Users can parse the IP input program list and select programs to mux out in this menu. The operating method is same with what explained above.



3.2.3 CI Card

FUTV468X IRD supports 4 CI cards (Card A, B, C and D) to descramble encrypted programs from RF, ASI or IP. Users can press ENTER key to enter '3 CI Card' to configure the 4 cards respectively

Press ENTER key to enter Card A (or Card B/C/D):

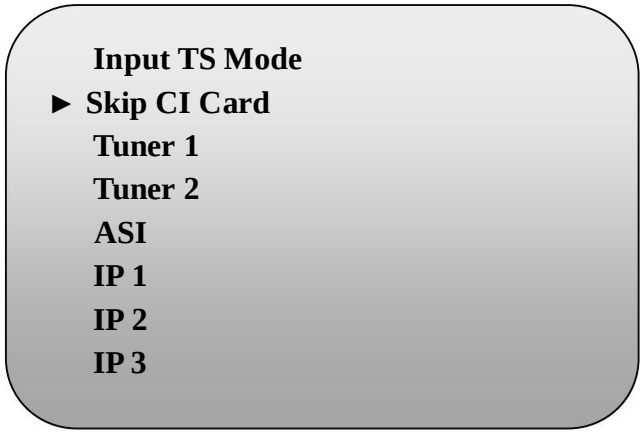
Max Bit rate

CI Max Bitrate options range from 48-108Mbps. Move the triangle to select a value as principle: Actual Input Bitrate≤ Max Bitrate≤CI Max decrypting capacity

Ø **Input TS Mode**

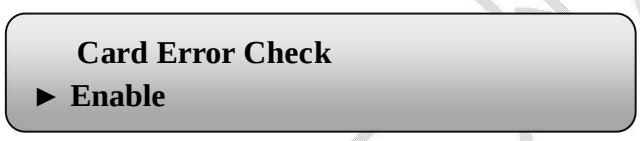
FUTV468X has 9 signal sources: Tuner 1-4, ASI, and IP1-4. One CI card can applied to descramble one channel input signal from the 9 signal sources. 'Skip CI card' means to skip the card which is used for FTA stream.

NOTE: Card A & B are designed to descramble tuner 1 & 2, ASI input and IP input 1 to 4, while card C & D A are designed to descramble tuner 3 & 4, ASI input and IP input 1 to 4.



Ø Card Error Check

Users can decide whether to enable or disable the card error check function in this menu.

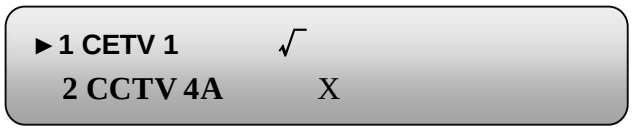


Ø Parse Program

Users can read the quantity of programs parsed from the de-scrambled channel.

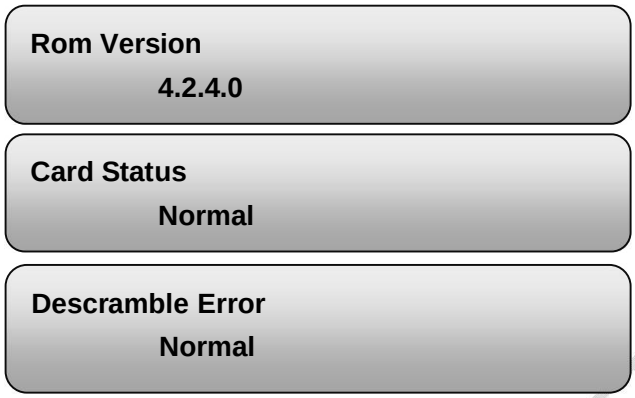
Ø Descramble Program

Users can select program(s) from the searched out programs to descramble. The quantity to be descrambled depends on the CAM/CI performance you apply to.



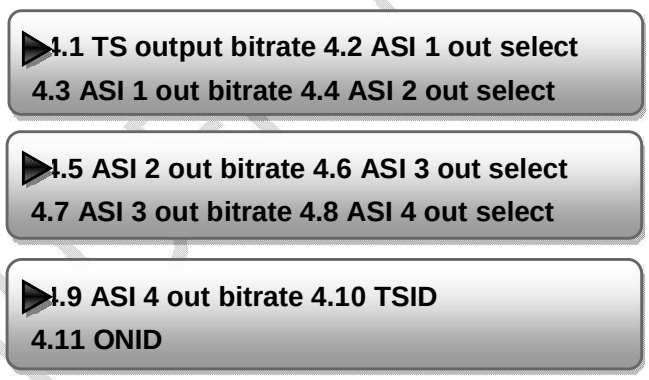
Ø **Rom Version/Card Status/Descramble Error**

Users can read the other info about the CI card in the following menus.



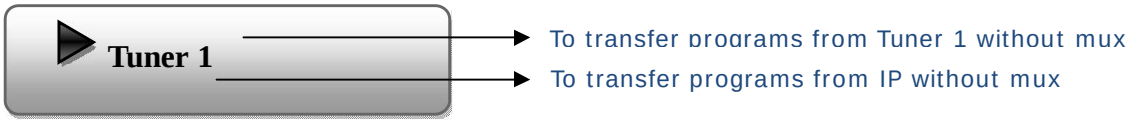
3.2.4 TS Config

Users can press ENTER key to enter '4 TS Config' to configure the parameters of TS output through ASI port groups. Submenus under TS Config are as follows:



TS Output bit-rate: Users can set TS output bit rate in this menu.

ASI X out select: FUTV468X is equipped with 4 pairs of ASI out ports. Each pair can transfer one channel of **tuner** or one channel of **IP** content of corresponding channel. For instance, user can select content from "tuner 1" or "IP 1" to output through "ASI 1".



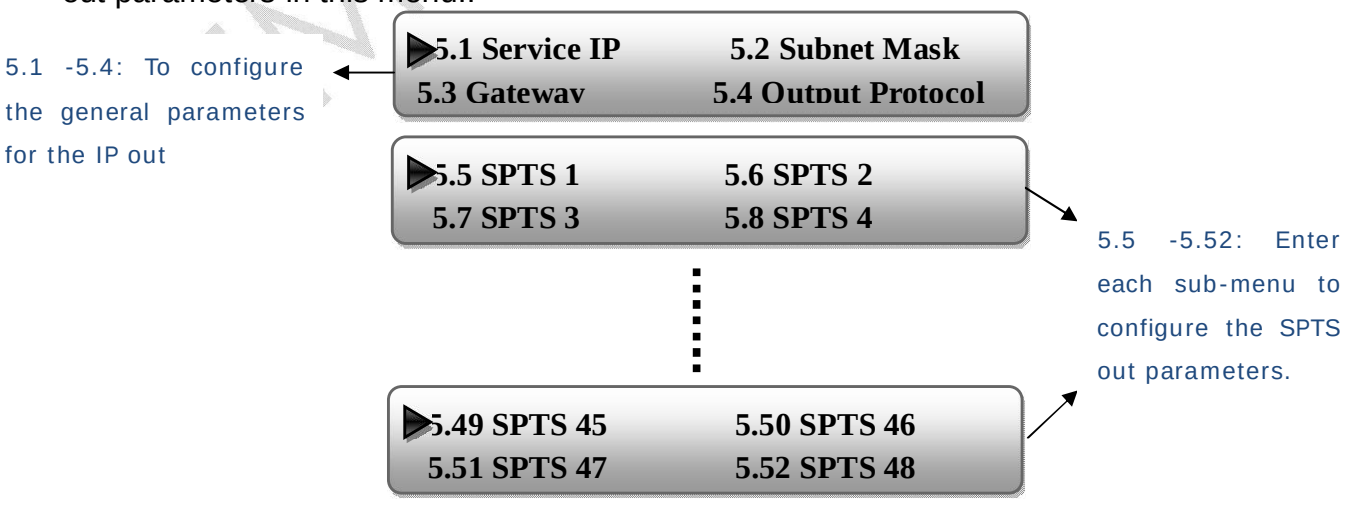
ASI X out bit-rate: Users can set TS output bit rate for the corresponding channel.

TS ID: Users can set TS ID in this menu.

ON ID: Users can set ON ID (original network ID) in this menu.

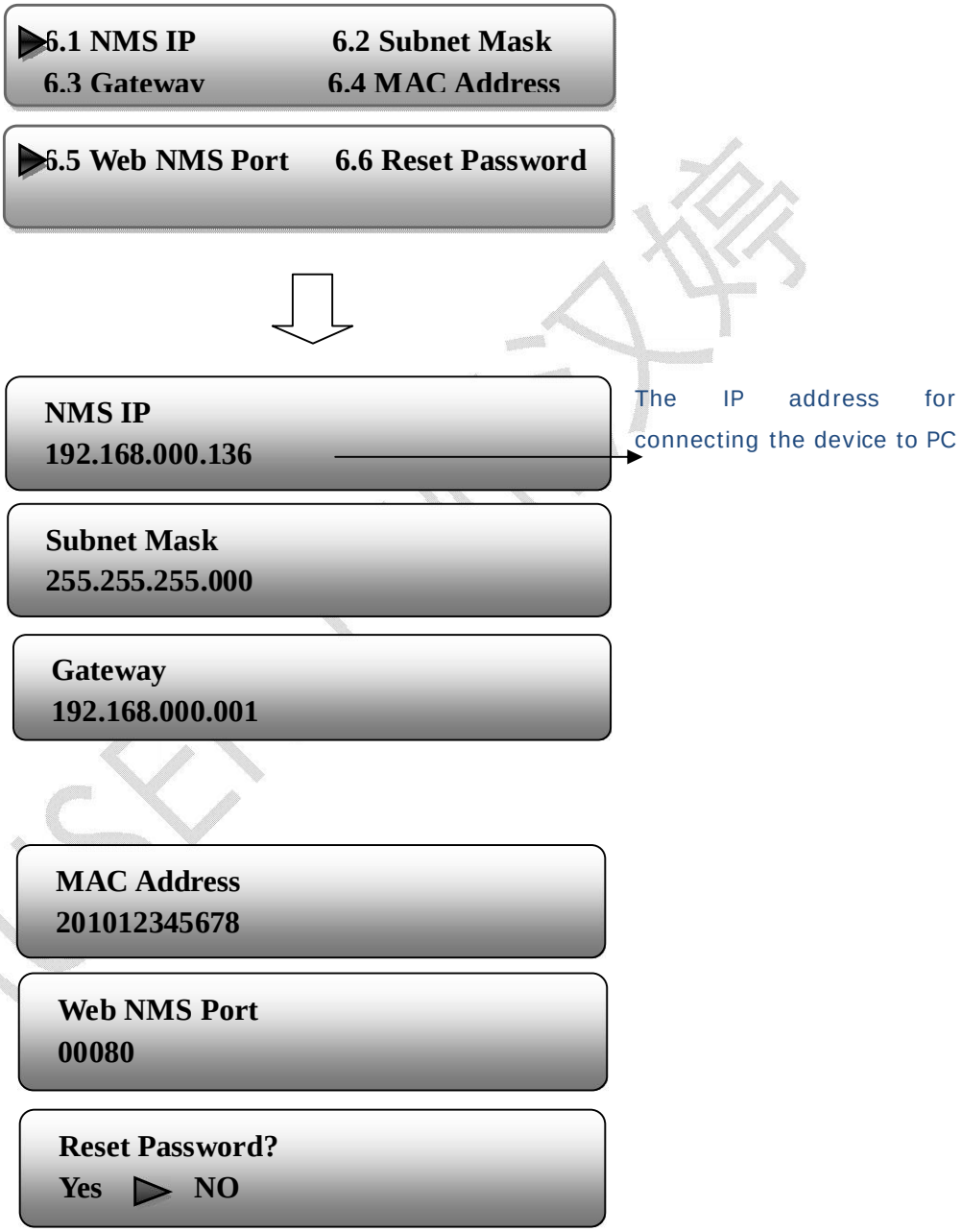
3.2.5 IP Stream

FUTV468X IRD supports 48 SPTS over IP (UDP, RTP/RTSP) output. Users can set the IP out parameters in this menu..



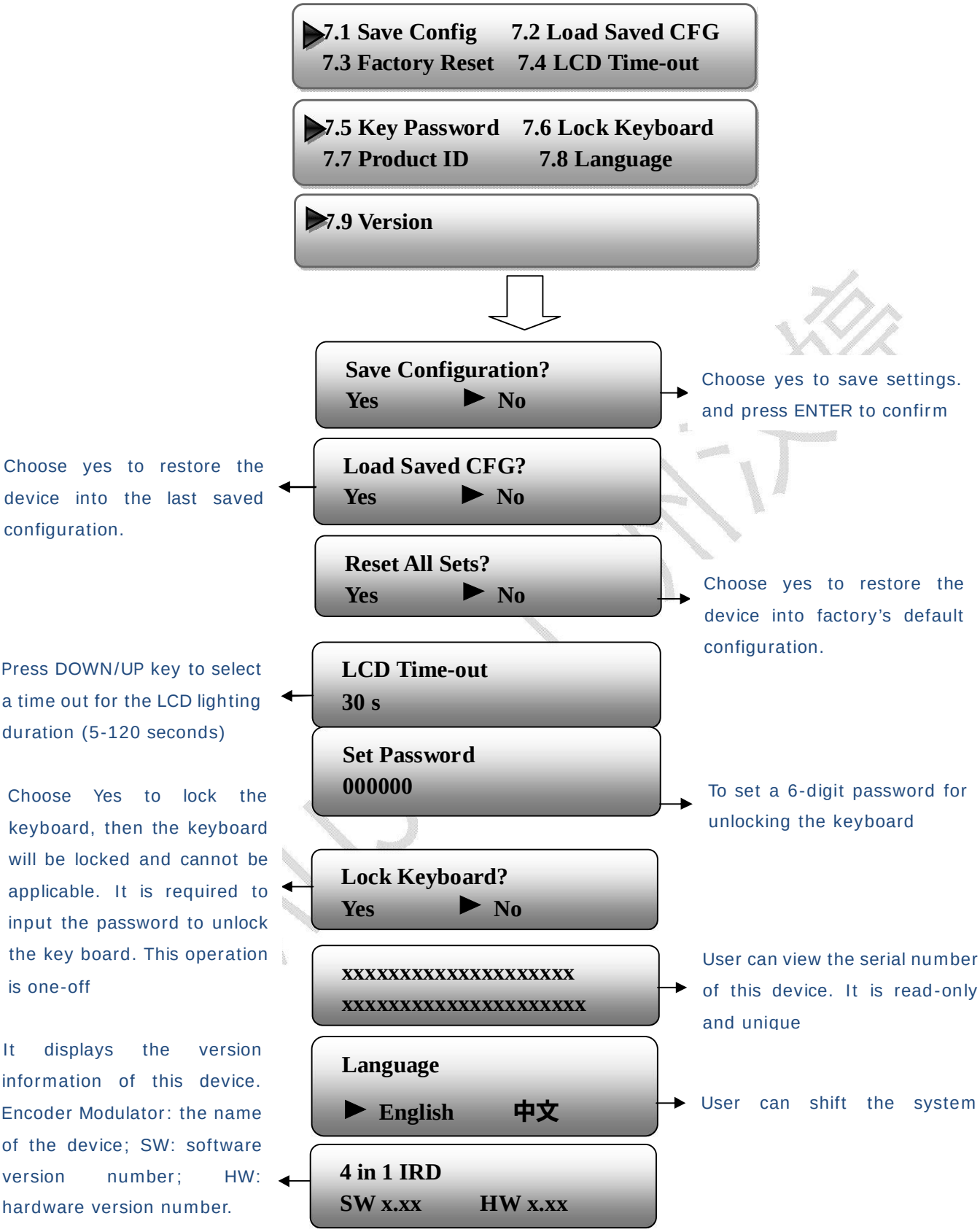
3.2.6 Network

Users can set network parameters in this menu. Enter ‘Network’ submenus to separately set corresponding parameters.



3.2.7 System

Users can set the system parameters in this menu. Enter ‘System’ submenus to separately set corresponding parameters.


▶7.1 Save Config 7.2 Load Saved CFG
7.3 Factory Reset 7.4 LCD Time-out
▶7.5 Key Password 7.6 Lock Keyboard
7.7 Product ID 7.8 Language
▶7.9 Version
Save Configuration?
Yes ▶ No
Choose yes to save settings. and press ENTER to confirm
Load Saved CFG?
Yes ▶ No
Choose yes to restore the device into the last saved configuration.
Reset All Sets?
Yes ▶ No
Choose yes to restore the device into factory's default configuration.
LCD Time-out
30 s
Press DOWN/UP key to select a time out for the LCD lighting duration (5-120 seconds)
Set Password
000000
To set a 6-digit password for unlocking the keyboard
Lock Keyboard?
Yes ▶ No
Choose Yes to lock the keyboard, then the keyboard will be locked and cannot be applicable. It is required to input the password to unlock the key board. This operation is one-off
xxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxx
User can view the serial number of this device. It is read-only and unique
Language
▶ English 中文
User can shift the system
4 in 1 IRD
SW x.xx HW x.xx
It displays the version information of this device. Encoder Modulator: the name of the device; SW: software version number; HW: hardware version number.

Chapter 4 Web-based NMS Management

In addition to using front buttons to control the device, users can also control and set the configuration with the web Brower in the PC.

4.1 login

The default IP address of this device is 192.168.0.136. (We can modify the IP through the front panel.)

Connect the PC (Personal Computer) and the device with net cable, and use ping command to confirm they are on the same network segment.

I.G. the PC IP address is 192.168.99.252, we then change the device IP to 192.168.99.xxx (xxx can be 1 to 254 except 252 to avoid IP conflict).

Use web browser to connect the device with PC by inputting the device's IP address in the browser's address bar and press Enter.

It will display the Login interface as Figure-1. Input the Username and Password (Both the default Username and Password are "admin".) and then click "LOGIN" to start the device setting.

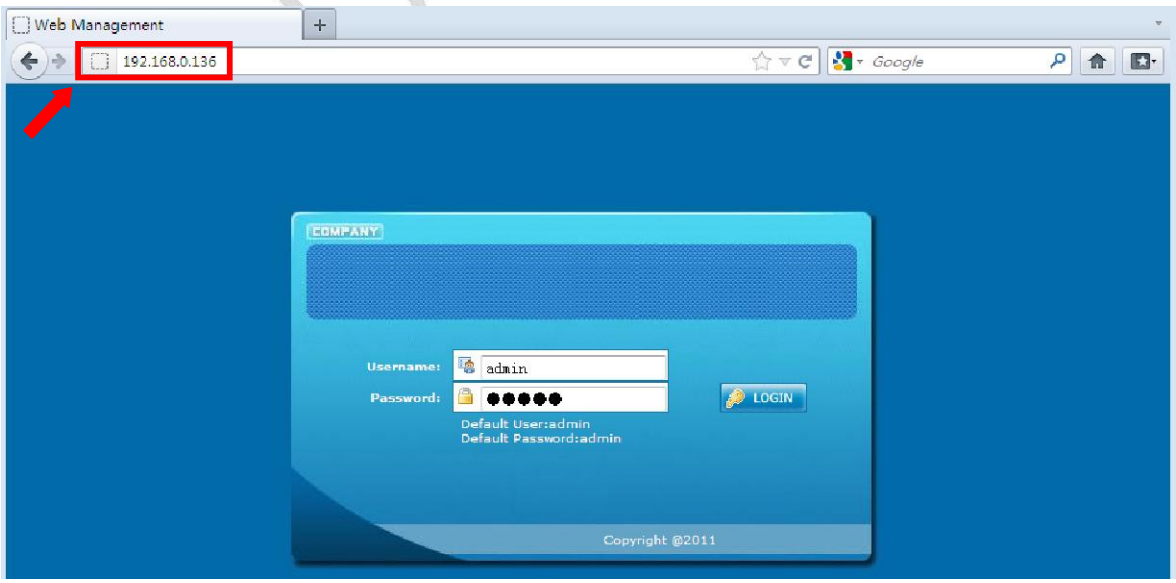


Figure-1

4.2 Operation

Summary:

When we confirm the login, it displays the WELCOME interface as Figure-2 where users can have an overview of the device's system information and working status.

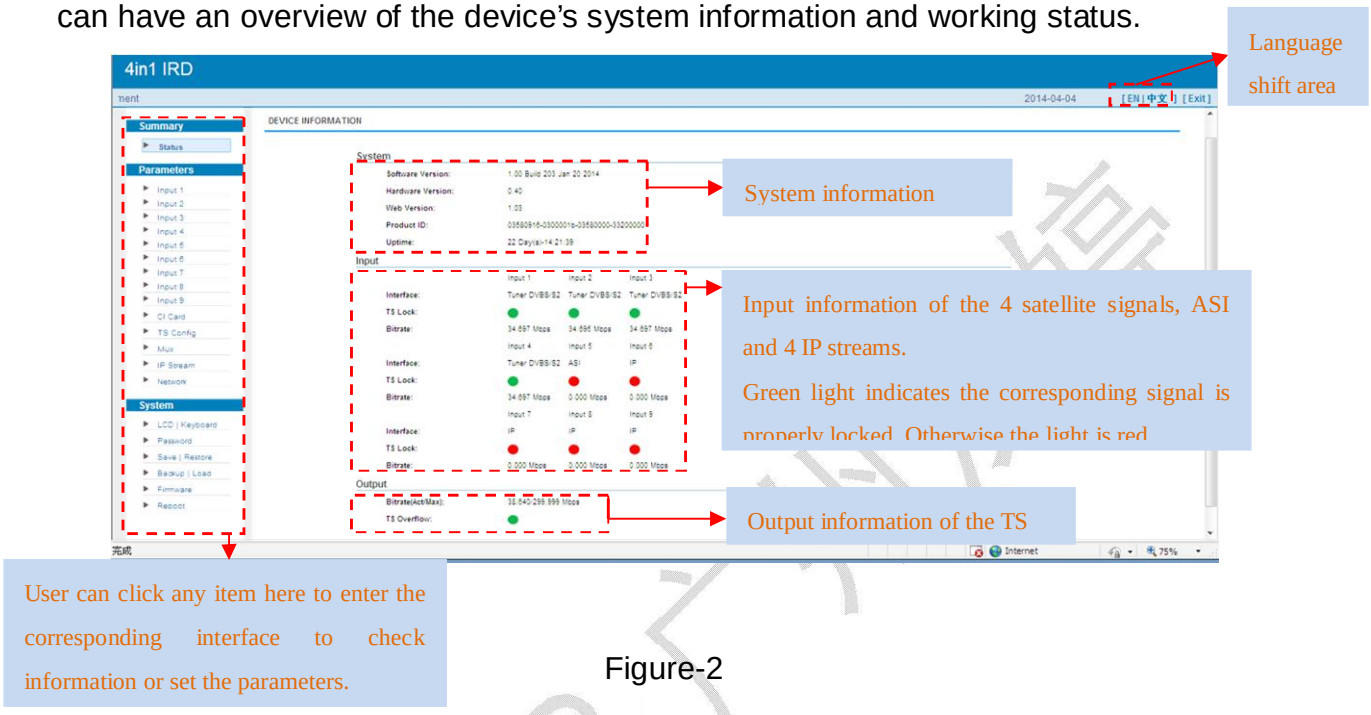


Figure-2

Parameters → Input 1/2/3/4 (Tuner Input 1-4):

From the menu on left side of the webpage, clicking "Input 1" (or "Input 2/3/4"), it displays the interface where users can configure the 4 Tuner input parameters separately. (Figure-3)

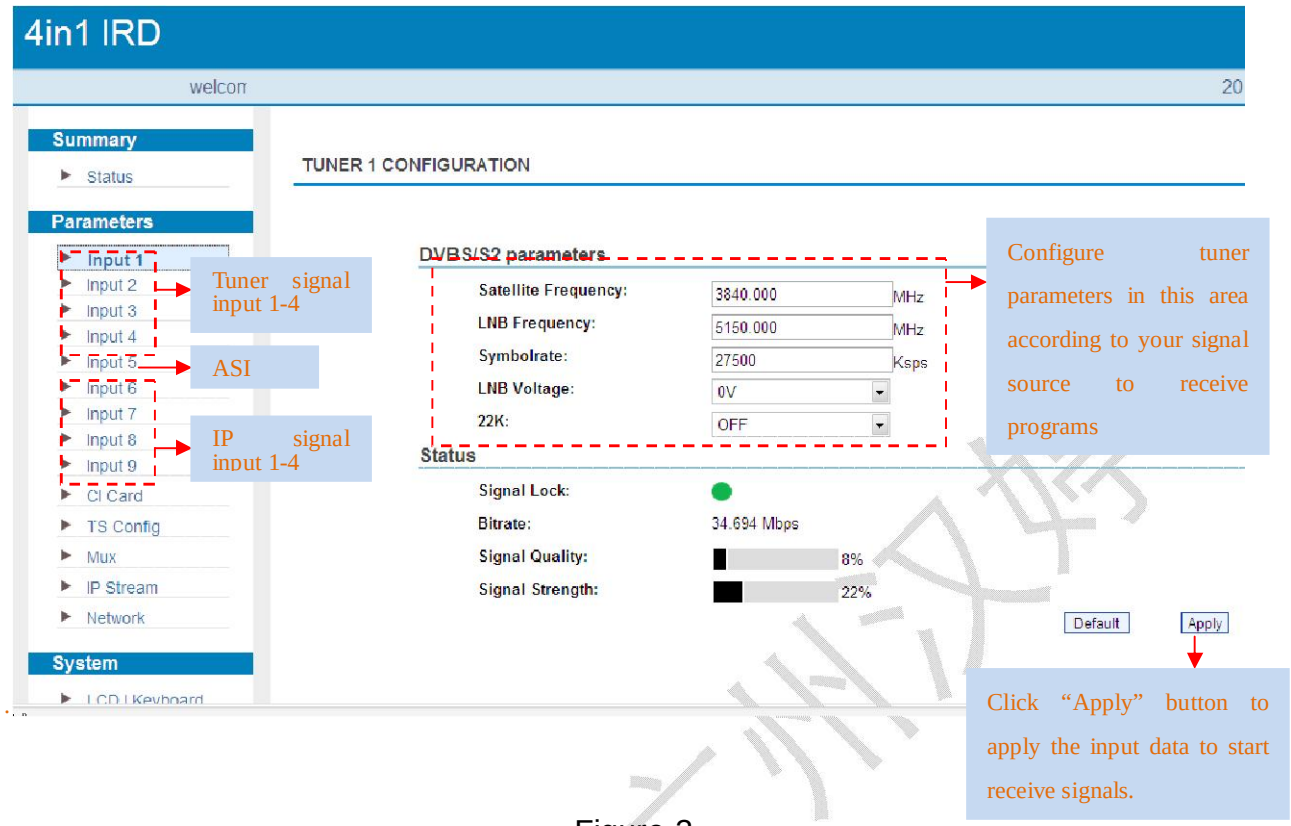


Figure-3

Parameters → Input 5 (ASI Input):

"Input 5" refers to the ASI source, this page is not applicable as it does not need to configure ASI signal. (Figure-4)

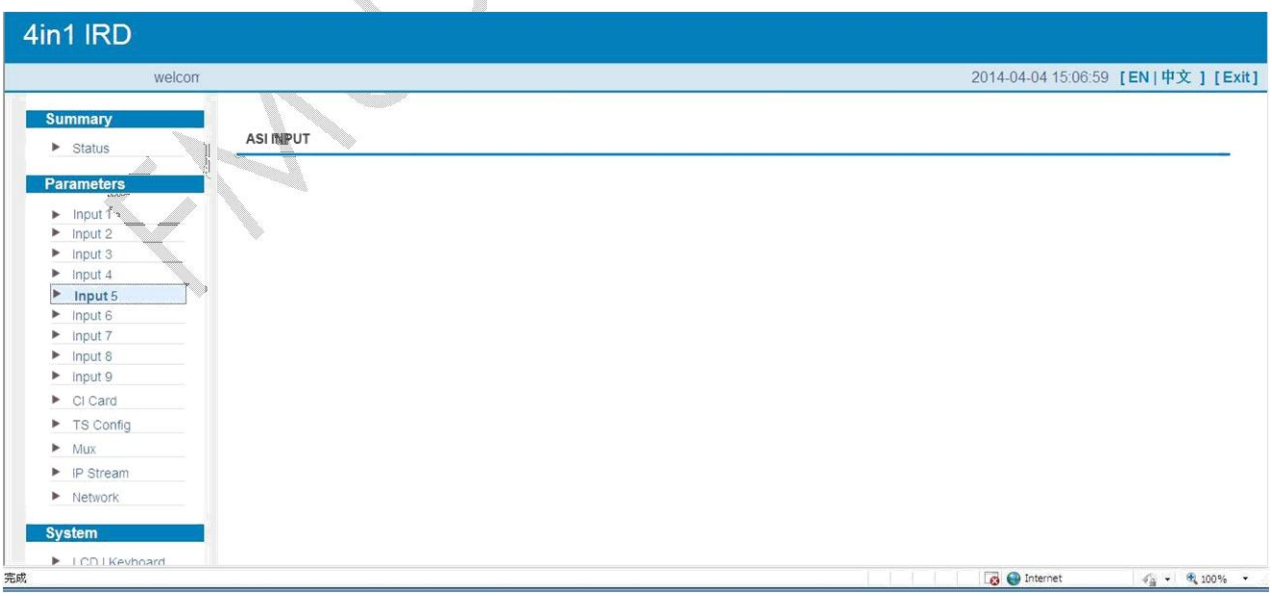


Figure-4

Parameters → Input 6/7/8/9 (IP Input 1-4):

From the menu on left side of the webpage, clicking “Input 6” (or “Input 7/8/9”), it displays the interface where users can configure the IP input parameters separately. (Figure-5)

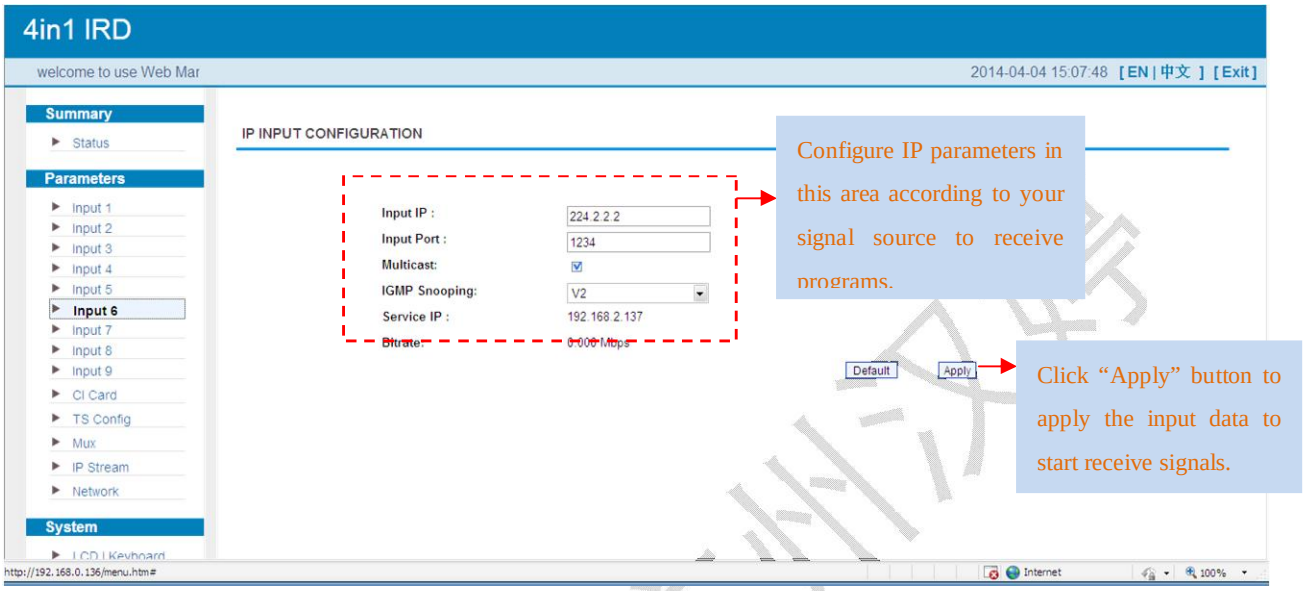


Figure-5

Parameters → CI Card:

FUTV468X supports 4 CI cards (Card A, B, C and D) to descramble programs from encrypted RF, ASI or IP. Users can click and enter ‘CI Card’ to configure the 2 cards respectively. (Figure-6)

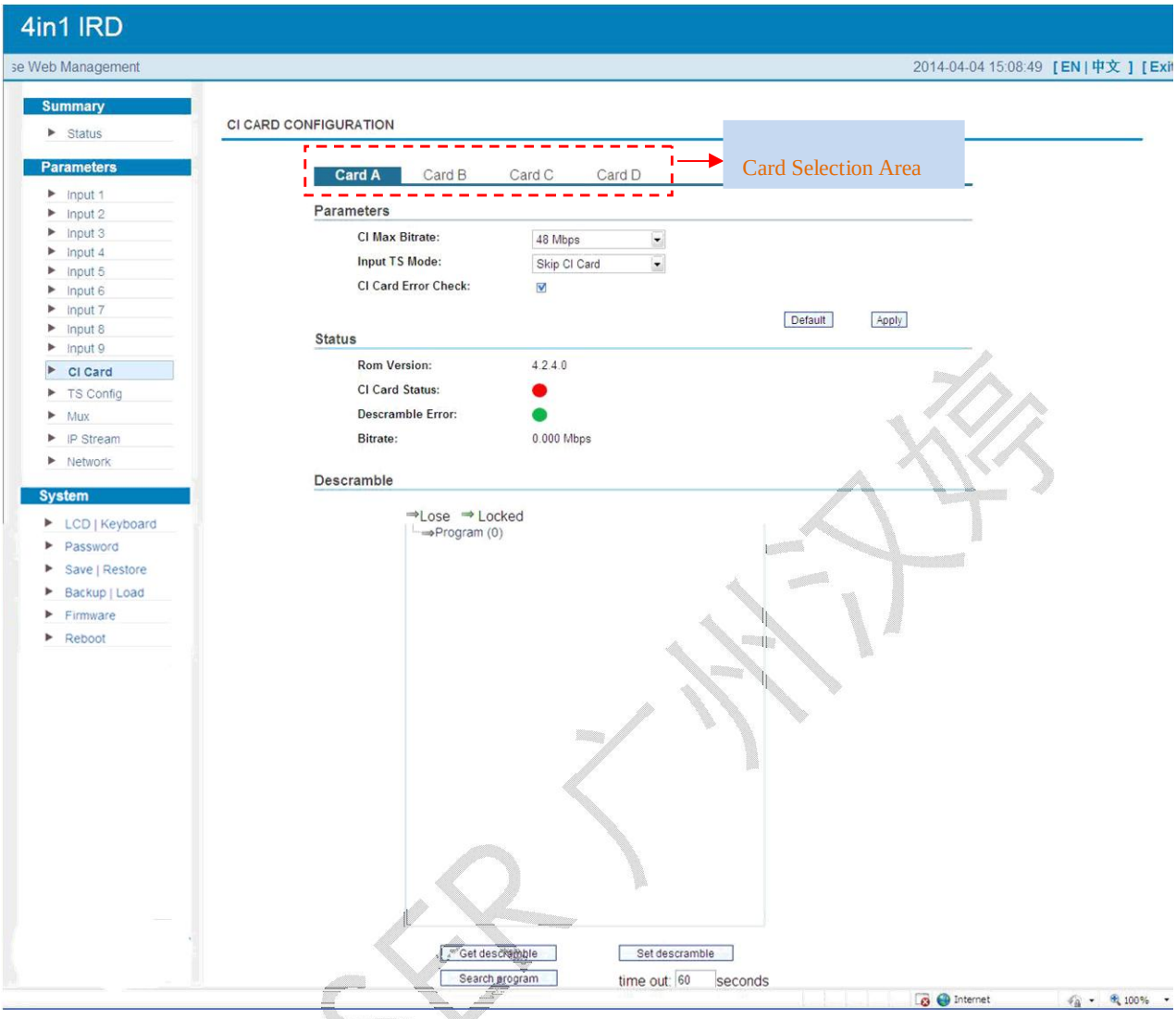
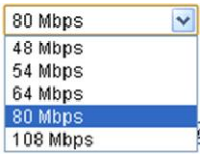


Figure-6

Ø CI Max Bit rate

CI Max Bitrate options range from 48-108Mbps. Select a value in the pull-down list as principle: Actual Input Bitrate≤ Max Bitrate≤CI Max decrypting capacit

NOTE!

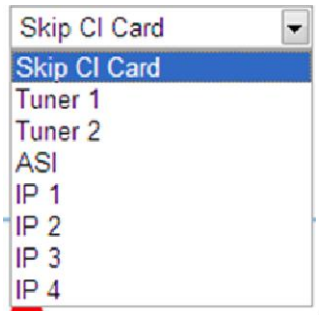


Ø Input TS Mode

FUTV468X has 9 signal sources: Tuner 1-4, ASI, and IP 1-4. One CI card can applied to descramble one channel input signal from the 9 signal sources. ‘Skip CI card’ means to skip

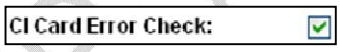
the card which is used for FTA stream.

NOTE: Card A & B are designed to descramble tuner 1 & 2, ASI input and IP input 1 to 4, while card C & D A are designed to descramble tuner 3 & 4, ASI input and IP input 1 to 4.



Ø **Card Error Check**

Users can decide whether to enable or disable the card error check function by checking the box.



After configuring the above CI card parameters, click Apply button to apply the input data and then click Search program button to parse programs from the channel selected in 'Input TS Mode'.

The searched out programs will be listed in the 'Descramble' box below: (Figure 7)

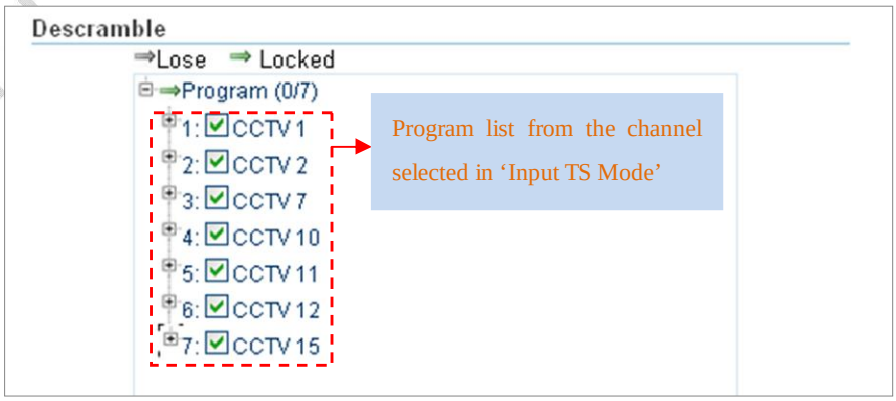
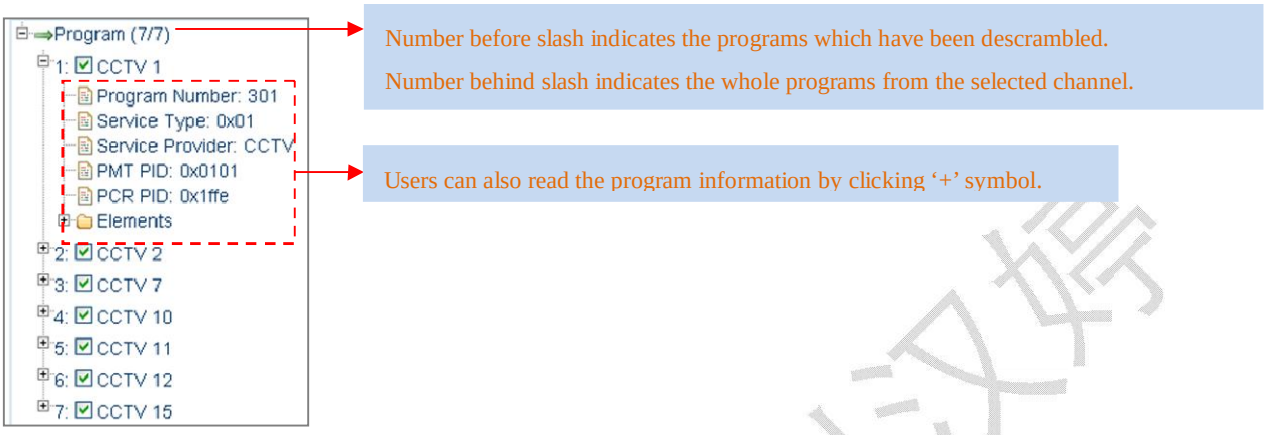


Figure-7

Check the program(s) to be descrambled and click Set descramble button to start descrambling the checked program(s). The program quantity to be descrambled will depend on the CAM/CI performance you apply to.



Parameters → TS Config:

From the menu on left side of the webpage, clicking "TS Config", it displays the interface where users can configure the parameters of TS output through ASI port groups. (Figure-8)

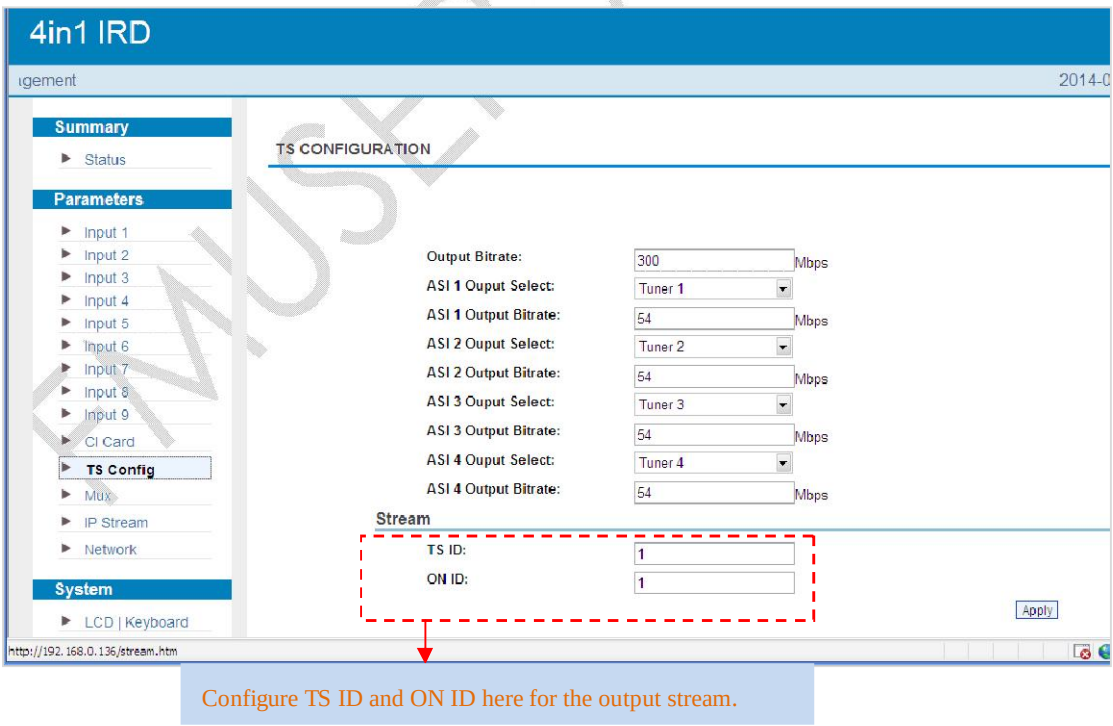


Figure-8

ASI X out select: FUTV468X is equipped with 4 pairs of ASI out ports. Each pair can transfer one channel of **tuner** or one channel of **IP** content of corresponding channel. For instance, user can select content from “tuner 1” or “IP 1” to output through “ASI 1”.

ASI X out bit-rate: Users can set TS output bit rate for the corresponding channel.

After finishing the configuration, click Apply to confirm.

Parameters → Mux:

From the menu on left side of the webpage, clicking “Mux”, it displays the interface where users can configure the programs to be multiplexed. (Figure-9)

NOTE: Programs selected to multiplex can only output through the 48 SPTS.

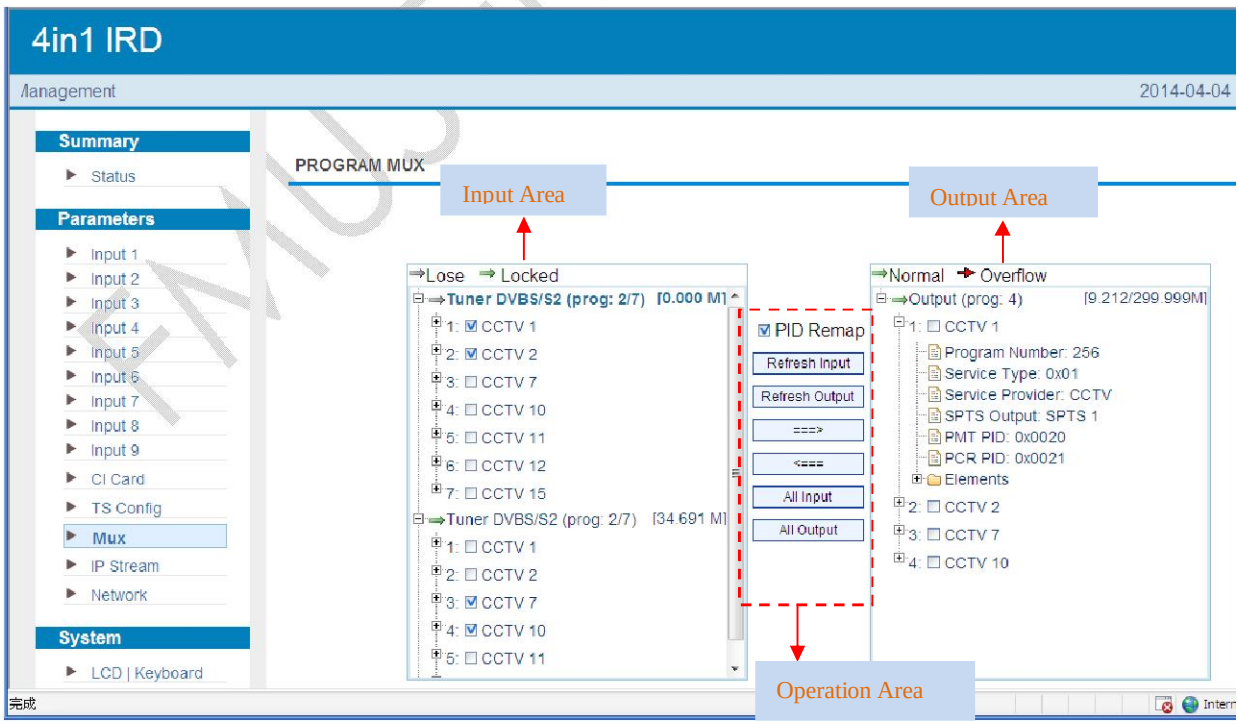


Figure-9

Configure ‘Input Area’ and ‘Output Area’ with buttons in ‘Operation Area’. Instructions are as below:

PID Remap: To enable/disable the PID remapping

Refresh Input To refresh the input program information

Refresh Output To refresh the output program information

===> Select one input program first and click this button to transfer the selected program to the right box to output.

<=== Similarly, user can cancel the multiplexed programs from the right box.

All Input To select all the input programs

All Output To select all the output programs

Parse program To parse programs time out: 60 seconds time limitation of parsing input programs

u Program Modification:

The multiplexed program information can be modified by clicking the program in the ‘output’ area. For example, when clicking 1: CCTV 1, it triggers a dialog box (Figure 10) where users can input new information.

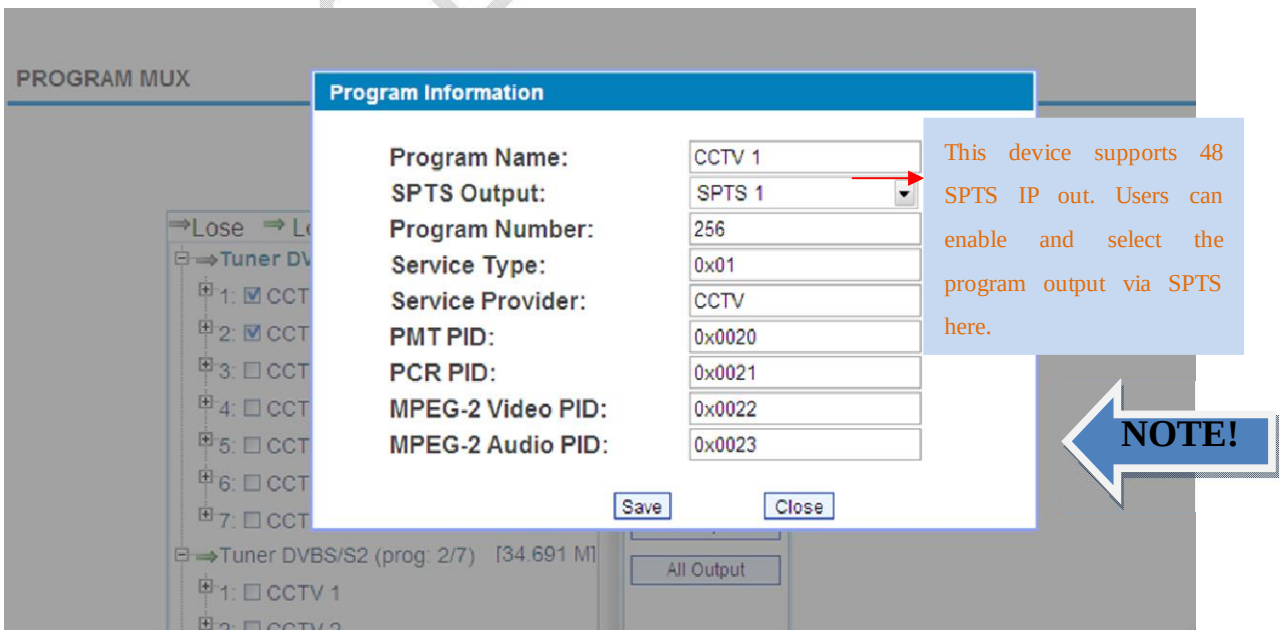


Figure-10

Input new data and click ‘Save’ button at last to confirm the modification.

Parameters → IP Stream:

This unit supports TS output in IP (48 SPTS). Click “IP Stream” and it displays the interface where users can configure the SPTS out parameters. (Figure-13)

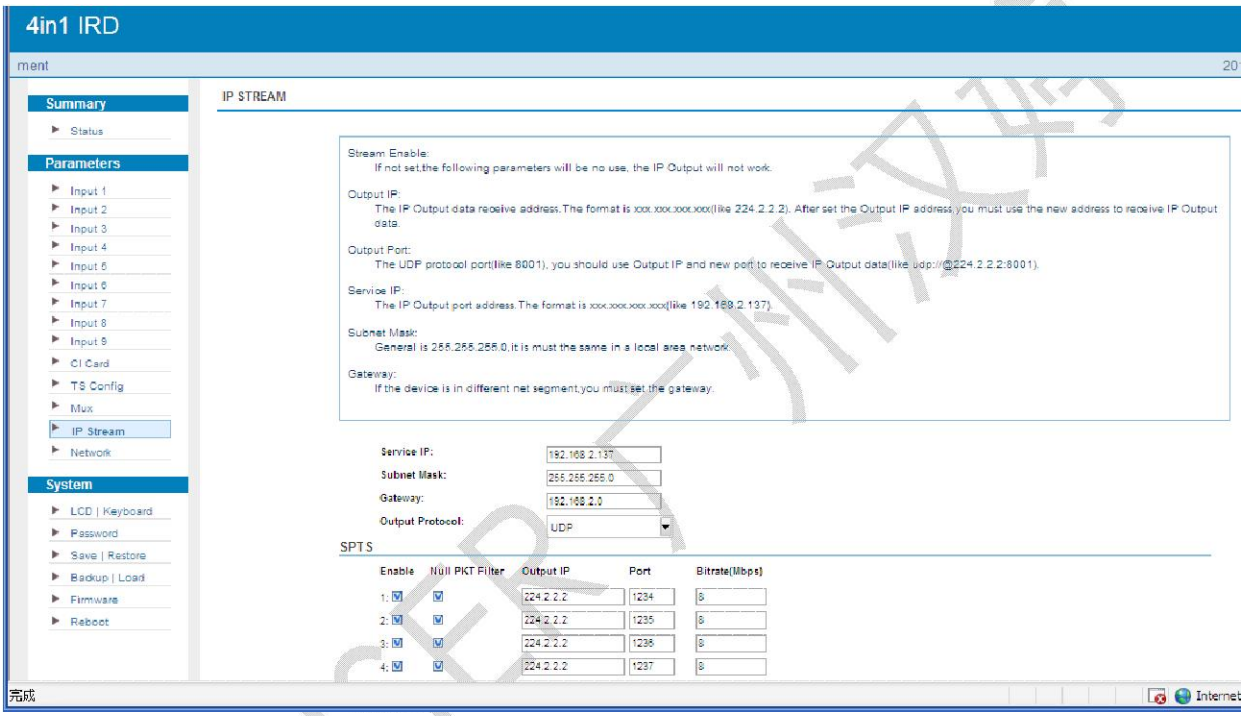


Figure-13

Parameters → Network:

From the menu on left side of the webpage, clicking “Network”, it will display the screen as Figure-14 where to configure the network parameters for the device.

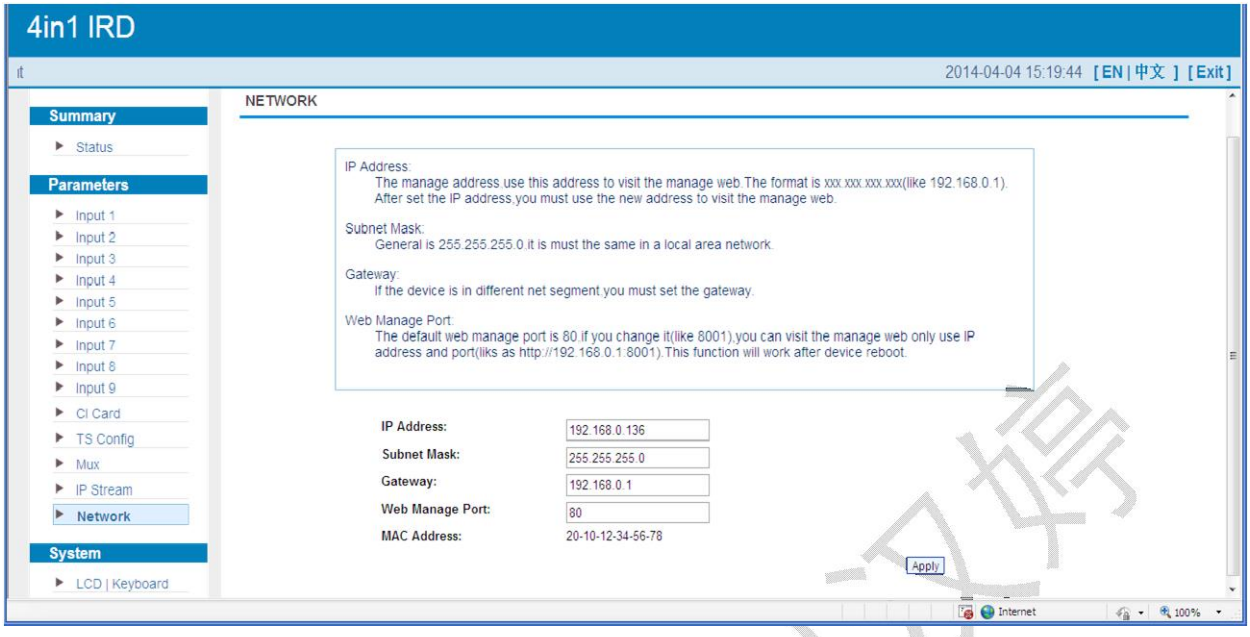


Figure-14

System → LCD/Keyboard:

From the menu on left side of the webpage, clicking “LCD/Keyboard”, it will display the screen as Figure-15 where to control the device’s front panel.

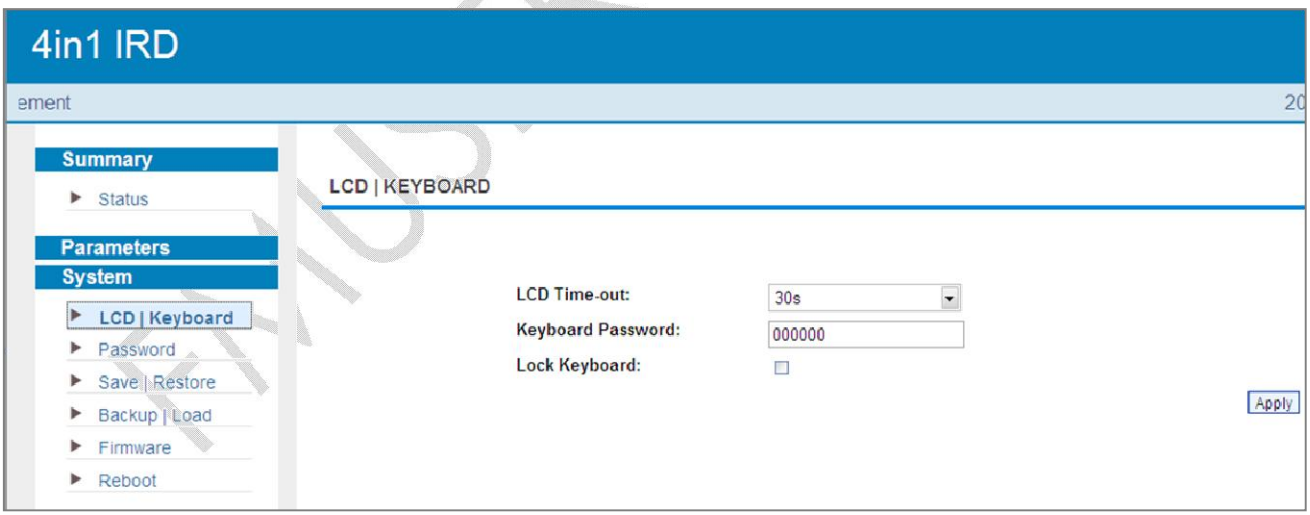


Figure-15

System → Password:

From the menu on left side of the webpage, clicking “Password”, it will display the screen as Figure-16 where to set the login account and password for the web NMS.

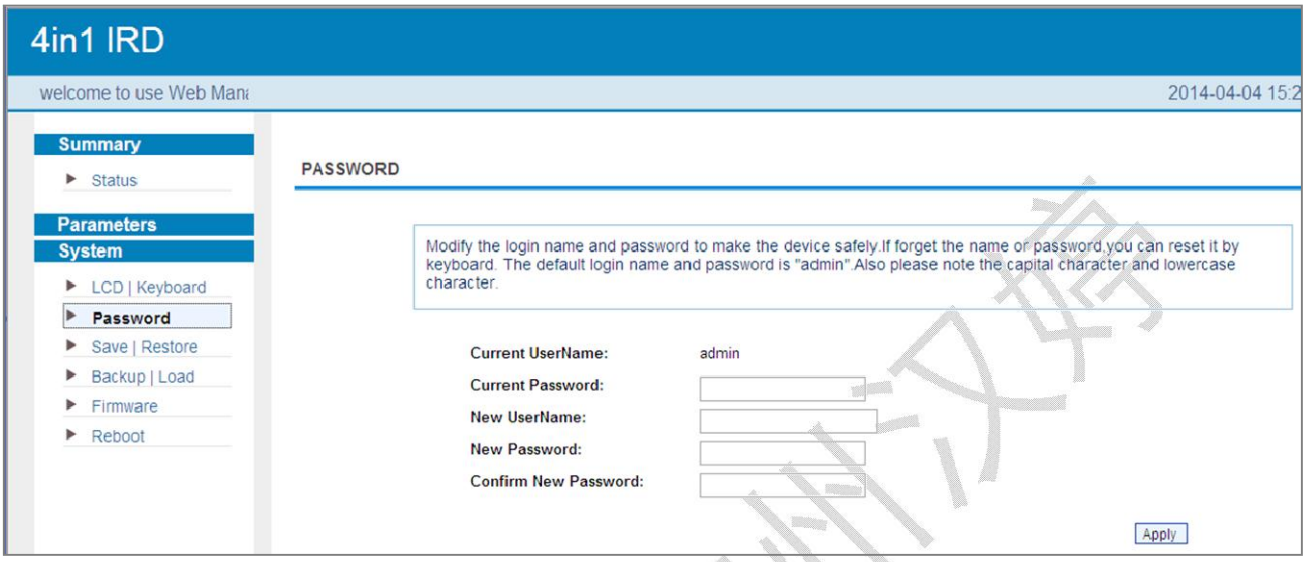


Figure-16

System → Save/Restore:

From the menu on left side of the webpage, clicking “Save/Restore”, it will display the screen as Figure-17 where to save or restore your configurations.

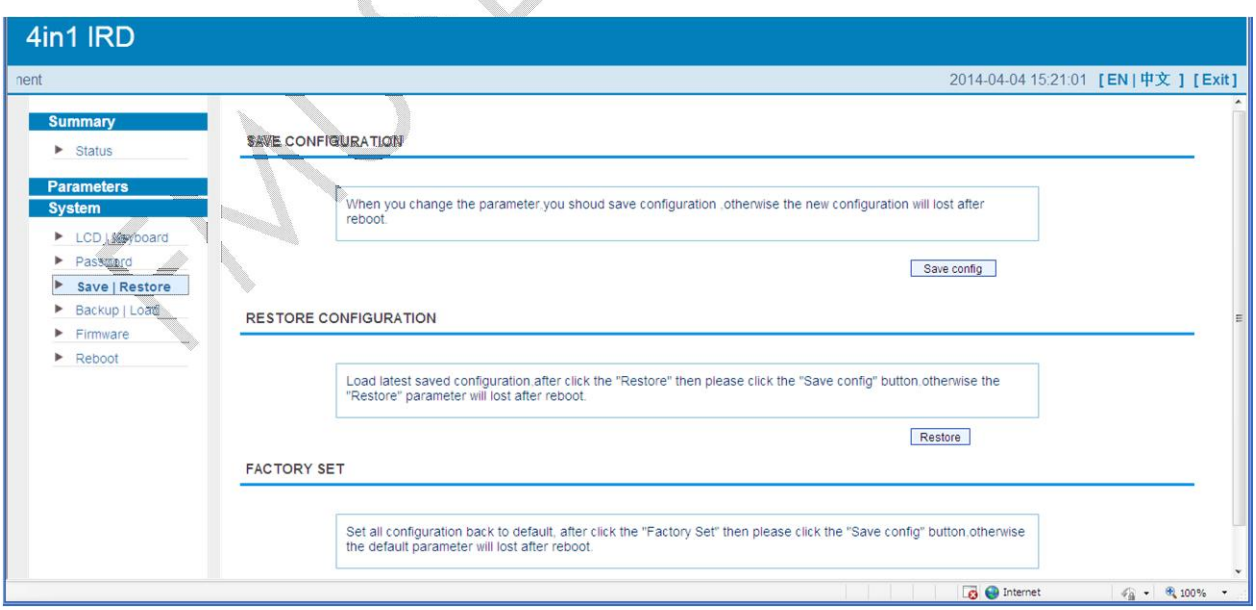


Figure-17

System → Backup/Load:

From the menu on left side of the webpage, clicking “Backup/Load”, it will display the screen as Figure-18 where to backup or load your configurations.

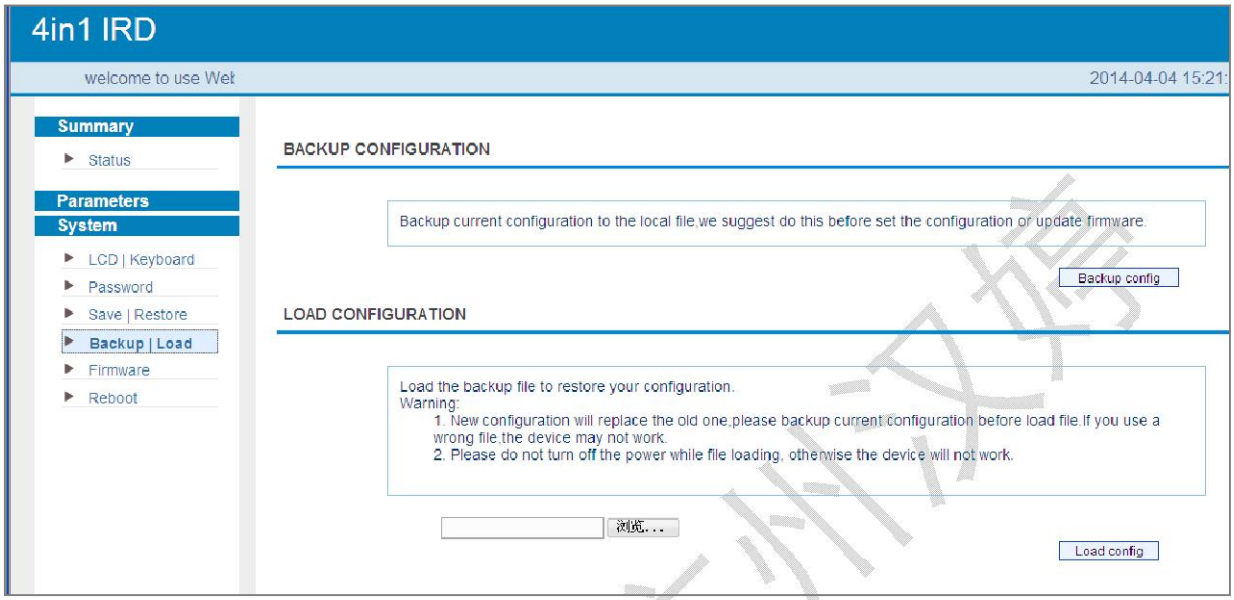


Figure-18

System → Firmware:

From the menu on left side of the webpage, clicking “Firmware”, it will display the screen as Figure-19 where to update firmware for the device.

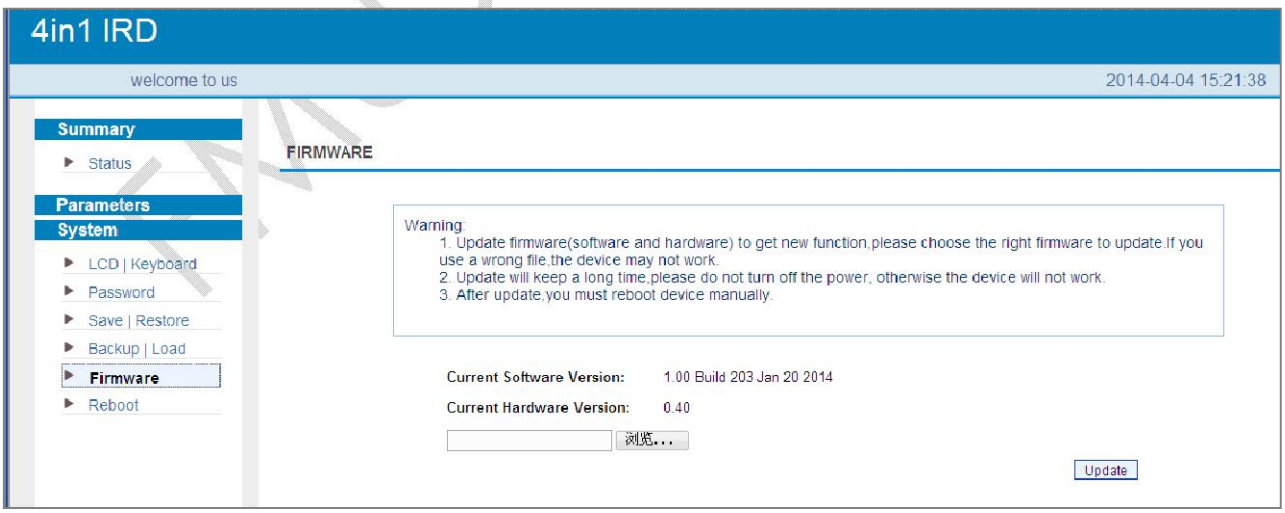


Figure-19

System → Reboot:

From the menu on left side of the webpage, clicking “Reboot”, it will display the screen as Figure-20 where to restart the device manually.

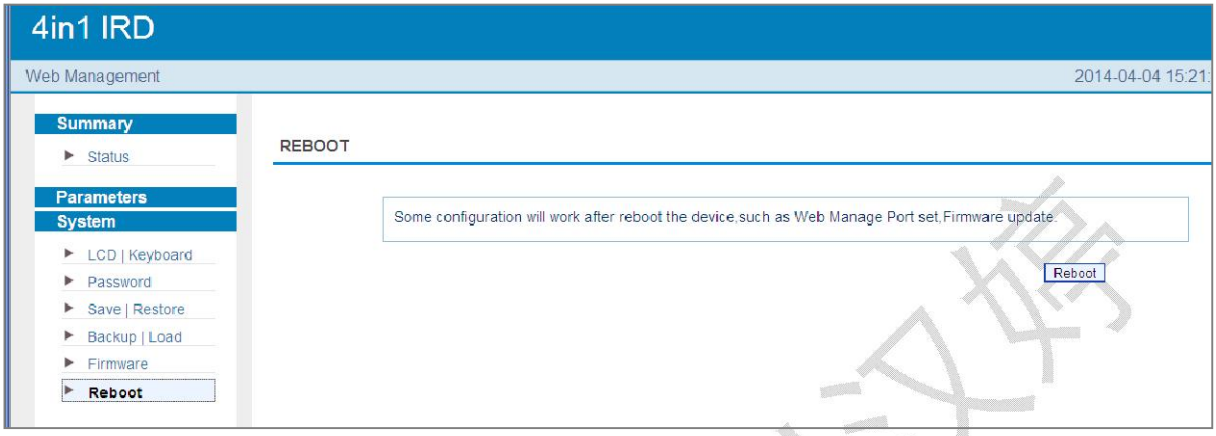


Figure-20

Chapter 5 Troubleshooting

FMUSER's ISO9001 quality assurance system has been approved by CQC organization. For guarantee the products' quality, reliability and stability. All FMUSER products have been passed the testing and inspection before ship out factory. The testing and inspection scheme already covers all the Optical, Electronic and Mechanical criteria which have been published by FMUSER. To prevent potential hazard, please strictly follow the operation conditions.

Prevention Measure

- Installing the device at the place in which environment temperature between 0 to 45 °C
- Making sure good ventilation for the heat-sink on the rear panel and other heat-sink bores if necessary
- Checking the input AC voltage within the power supply working range and the connection is correct before switching on device
- Checking the RF output level varies within tolerant range if it is necessary
- Checking all signal cables have been properly connected
- Frequently switching on/off device is prohibited; the interval between every switching on/off must greater than 10 seconds.

Conditions need to unplug power cord

- Power cord or socket damaged.
- Any liquid flowed into device.
- Any stuff causes circuit short
- Device in damp environment
- Device was suffered from physical damage
- Longtime idle.
- After switching on and restoring to factory setting, device still cannot work properly.
- Maintenance needed

Chapter 6 Packing List

l	FUTV468X 4 in 1 IRD	1pcs
l	User's Manual	1pcs
l	RF Cables	2pcs
l	Power Cord	1pcs

Ordering Guide

FUTV468X, 'X' should be interpreted as different digits which indicate tuners of different standard.

- ✓ FUTV4681 DVB-C IRD
- ✓ FUTV4684 DVB-T/T2 IRD
- ✓ FUTV4685 DVB-S/S2 IRD